

Sewer System Management Plan

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Facilities Division
and
Environment, Health, and Safety Division



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Signature Sheet

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Introduction

This Sewer System Management Plan (SSMP) has been prepared in compliance with requirements of the San Francisco Bay Regional Water Quality Control Board (RWQCB) pursuant to Section 13267 of the California Water Code, as described in the letter from the RWQCB to the Lab dated July 7, 2005. The RWQCB letter mandates that the Lab prepare an SSMP following the guidelines in the SSMP Development Guide prepared by the RWQCB in cooperation with the Bay Area Clean Water Agencies (BACWA). The Lab must also comply with sanitary sewer overflow (SSO) electronic reporting requirements issued in November 2004 by SWRCB and in May 2008 by RWQCB.

The State Water Resources Control Board (SWRCB) acted at its meeting on May 2, 2006 to require all public wastewater collection system agencies in California with greater than one mile of sewers to be regulated under General Waste Discharge Requirements (WDR). The SWRCB action, which will apply to the Lawrence-Berkeley National Laboratory (LBNL), also mandates the development of an SSMP and the reporting of SSOs using an electronic reporting system. The SWRCB SSMP requirements are similar to those promulgated by the RWQCB but differ in organization and some details.

The intent of this SSMP is to meet the requirements of both the RWQCB and SWRCB requirements. As prescribed by these requirements, the SSMP will be completed over the course of approximately 2 years. This version of the SSMP includes the first 2 sections of the 11 required sections:

- Goals
- Organization

By November 2, 2009, the following 4 sections will be added:

- Legal authority
- Operation and Maintenance Program
- Overflow Emergency Response Program
- Fats, Oils and Grease Control Program

By May 2, 2010, the final 5 sections will be added:

- Design and Performance
- System Evaluation and Capacity Management
- Monitoring, Measurement, and Program Modifications
- Audit Plan
- Communication Program

System Overview

The East Bay Municipal Utility District (EBMUD), through the City of Berkeley, provides wastewater collection service to the LBNL. All wastewater discharged to the LBNL sanitary sewer system exits the facility at two outfall locations where they connect to the EBMUD (Blackberry Station) or University of California systems (Strawberry Station). Each of the perimeter outfall locations has a monitoring facility, which is used for continuous flow monitoring and for extraction of samples for chemical and radioisotope analysis as required by the EBMUD and the Department of Energy. The average wastewater flow from the LBNL site is 135,000 gallons per day.

The LBNL sanitary sewer system consists of over 29,000 feet of pipeline (5.5 miles), ranging in sizes of 3 inches to 10 inches, and serving an average LBNL population of 4,000 persons. Presently, there are 68 occupied structures at LBNL that discharge to the system. In addition, the Strawberry System carries waste water from the University of California's Lawrence Hall of Science, Botanical Gardens, Space Science Laboratory, and Mathematical Sciences Research Institute. The sewer system is completely dependant upon gravity flow; no pumping stations exist at LBNL.

Goals

The SSMP provides a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help reduce and prevent SSOs, as well as mitigate any SSOs that occur. The SSMP will accomplish the following 3 goals:

- Identify, prioritize, and continuously renew and replace sewer system facilities to maintain reliable service now and in the future.
- Cost-effectively minimize infiltration and inflow.
- Properly manage and operate the Laboratory's facilities to minimize the number and impact of SSOs.

Organization

This section of the SSMP identifies:

- The name of LBNL's responsible or authorized representative
- The names and telephone number for management, administrative, and maintenance positions for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanations; and
- The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water board and other applicable agencies.

2.1 RESPONSIBLE OR AUTHORIZED REPRESENTATIVE

Preparation of the SSMP is a shared responsibility between 2 LBNL organizations:

1. Facilities Division is responsible for system operation, repairs, improvements, and modifications. In addition, it manages the operating budget, secures funding for improvement/repair/survey projects, and maintains records of the underground sanitary sewer infrastructure.
2. EH&S Division manages the wastewater discharge compliance program and the site security services. It is responsible for compliance, sampling, testing, and reporting sanitary sewer outflow volume and content as required by the East Bay Municipal Utility District wastewater discharge permit for the LBNL site. In the event of a sanitary sewer overflow, the EH&S Division manages the reporting requirements to all regulatory agencies, including SWRQB, RWQCB, and City of Berkeley.

The Facilities Division Utilities Manager is responsible for overseeing the overall implementation of the SSMP. The EH&S Division Environmental Manager is the Lab's authorized representative registered with the San Francisco Bay Regional Water Quality Control Board SSO eReporting Program and the California Integrated Water Quality System (CIWQS) to certify SSO reports. Table 2-1 summarizes the responsibilities for SSMP implementation by Section.

Table 2-1 Responsibility for SSMP Implementation by Section

SSMP Section	Responsible Division(s)
1 – Goals	Facilities
2 – Organization	Facilities/EH&S
3 – Overflow Emergency Response Plan	Facilities
4 – FOG Control	Facilities
5 – Legal Authority	EH&S
6 – Measures and Activities	Facilities
7 – Design and Construction Standards	Facilities
8 – Capacity Management	Facilities
9 – Monitoring, Measurement and Program Modifications	Facilities
10 – SSMP Audits	EH&S
11 – Communication Plan	EH&S

2.2 ROLES AND RESPONSIBILITIES BY POSITION

Roles and responsibilities regarding the LBNL sanitary sewer system are as follows:

Utilities Manager: Reporting to the Operations Department Head, the Utilities Manager (UM) operates a comprehensive maintenance plan to insure a sufficient, dependable waste system, minimizing SSOs and meeting the requirements of the Department of Energy. The Utility Manager organizes multiple maintenance efforts: including inspections, man-hole repairs/coatings, CCTV recording, and periodic high-pressure water jetting. The UM maintains a detailed record of system sizing, pipe composition, miles of forced mains, miles of laterals, number of service lateral connections, sanitary sewer system construction dates, CCTV recordings in miles/year, repairs/replacements and system cleaning production in miles/year. The UM secures funding, allocates expenditures, develops and plans infrastructure projects. Annually completes (April 1st) the SSO Questionnaire and provides responses to the Wastewater Discharge Program Manager to input into the on-line CIWQS database.

Business Manager: Under general direction of the Facilities Division Director, the Business Manager is responsible for the planning and supervision of the Lab's accounting and financial record keeping activities.

Inspector: Under general supervision of the Project Support Services, the Inspector personally performs a variety of inspection activities relating to sewer facility construction to ensure compliance with approved plans and enforcement of Laboratory's design specifications relating to construction of the sewer system.

Maintenance Engineer: Under general direction of the UM, the Maintenance Engineer plans, organizes, administers and directs the maintenance, repair, installation and upgrading of the Lab's wastewater collection system infrastructure and maintains a database on these facilities.

Plant Maintenance Technician (PMT): Under supervision of the Maintenance Superintendent, the Maintenance Worker performs a variety of tasks related to the maintenance, cleaning, and repair of the Lab's wastewater collection system, pump stations, and related appurtenances.

Environmental Manager: Plans, directs and manages the environmental protection programs within the LBNL facility. Performs accidental release notifications and prepares reports to Federal, State, and local agencies. Monitors and reviews LBNL activities for compliance with environmental laws and regulations.

Wastewater Discharge Program Manager: Designs and coordinates the wastewater discharge compliance program for LBNL. Assists Facilities management in interpreting and applying wastewater discharge requirements at the LBNL site. Provides backup support for performing accidental release notifications and reporting to Federal, State, and local agencies. Submits the monthly “no spill” report to the on-line CIWQS database.

Names and contact information for key SSMP staff are in the following table:

POSITION	NAME	OFFICE PHONE NUMBER	CELL PHONE NUMBER
FACILITIES DIVISION:			
Operations Manager	Ken Fletcher	(510) 486-5770	
Utilities Manager	Mike Dong	(510) 486-6458	(510) 734-3711
EH&S DIVISION:			
Environmental Manager	Ron Pauer	(510) 486-7614	(510) 289-9324
Wastewater Program Manager	Robert Fox	(510) 486-7327	(510) 425-0451 (pager)

The SSMP organization is shown in the chart on Figure 2-1.

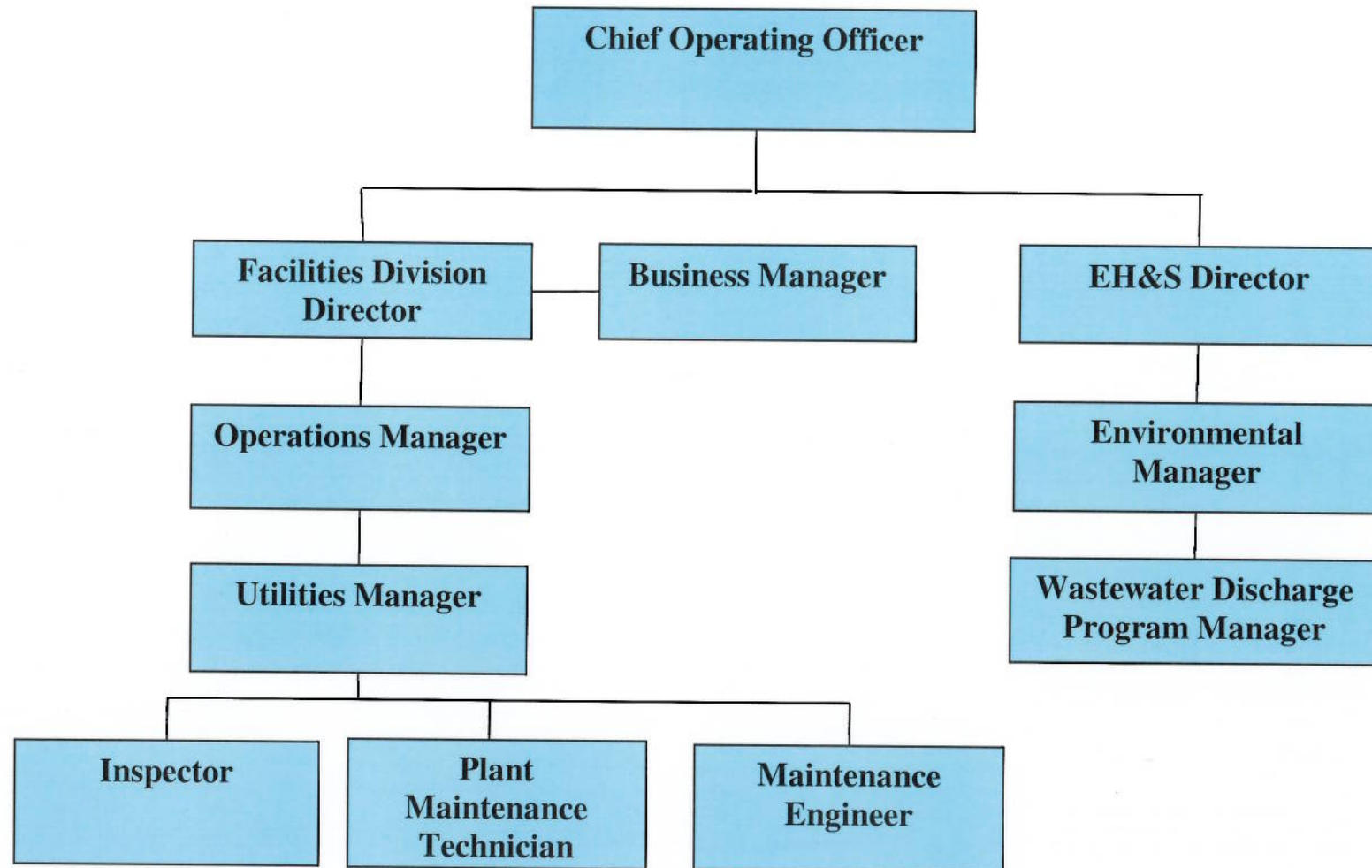


Figure 2-1 SSMP Organization Chart

2.3 CHAIN OF COMMUNICATION FOR RESPONDING TO SSOs

The communication chain usually begins when the Plant Maintenance Technician (PMT) responds to a reported release, assesses the condition and determines the cause to be a sanitary sewer overflow. Within the first 2 hours, the PMT will notify both his supervisor and EH&S Security and provide the following information:

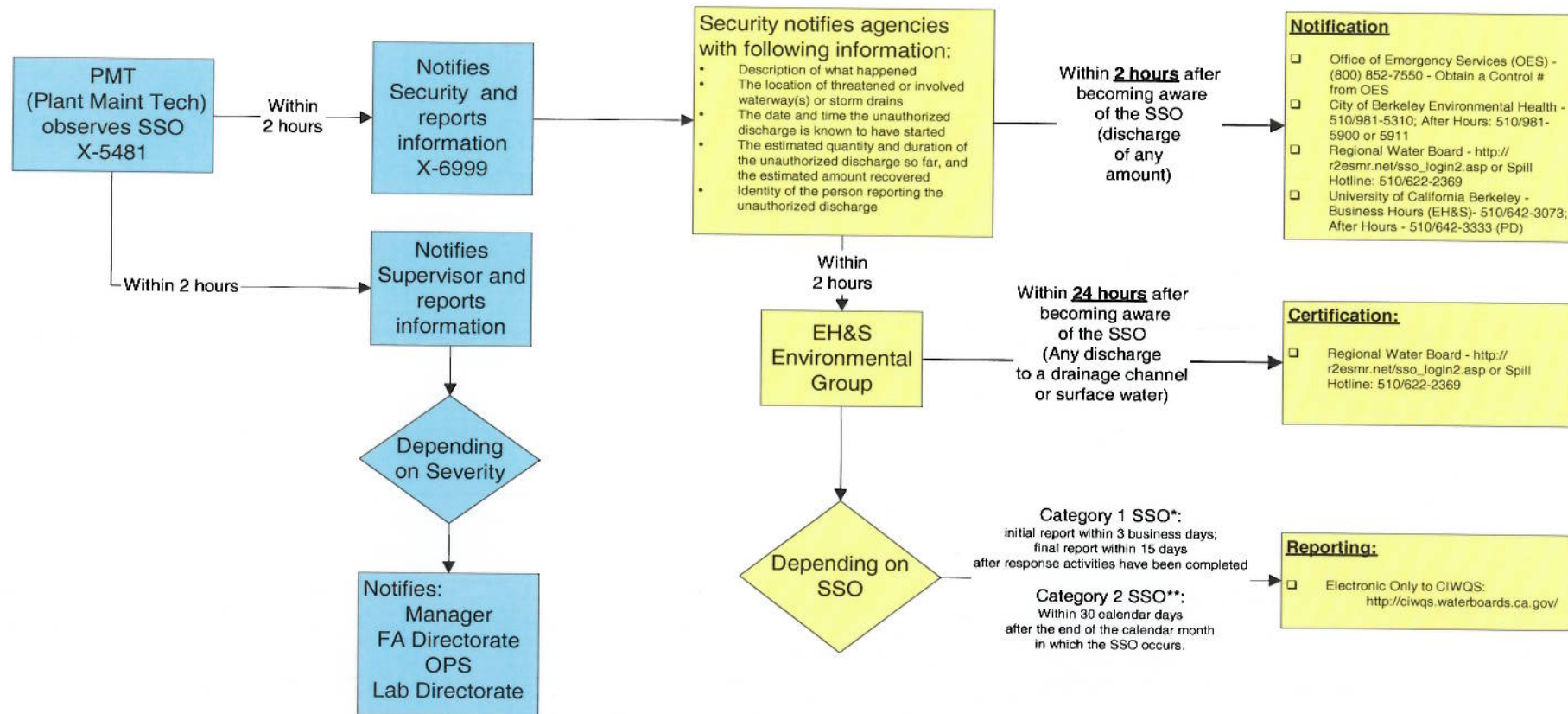
- Description of what happened
- Location of release and of threatened or involved waterway(s) or storm drains
- Date and time the unauthorized discharge is known to have started
- Estimated quantity and duration of the unauthorized discharge
- Identify of person reporting the unauthorized discharge

Facilities PMT personnel will use the emergency contact list to notify a Plumbing Shop employee to respond to spill. If unable to contact a Plumbing Shop employee, the secondary resource shall be a drain cleaning contractor currently under blanket purchase order. (i.e. Roto-Rooter)

Depending on the severity of the SSO, the PMT supervisor may also notify the Facilities Utilities and Operations managers, the Facilities Director and the Chief Operations Officer.

Sanitary Sewer Overflow (SSO) Off Hours Notification Procedure

EMRG- 051A



*Category 1 SSO - Discharges that equal or exceed 1000 gallons
Discharges to a drainage channel and/or surface water
Discharges to a storm drainpipe that was not fully captured

**Category 2 SSO - Any discharge to a drainage channel or surface water

Responsible Divisions

FA

EH&S

Figure 2-2 Sanitary Sewer Overflow Off Hours Notification Procedure

2.4 CHAIN OF COMMUNICATION FOR REPORTING SSOs

The initial notification of SSOs to the various regulatory agencies is by EH&S's Environmental Services Group (normal business hours) or Security Group (off hours). See Figure 2-2 for an off hours notification flowchart.

The following information should be provided to the agencies as soon as possible but within the first 2 hours of SSO discovery:

- Description of what happened
- Location of threatened or involved waterway(s) or storm drains
- Date and time the unauthorized discharge is known to have started
- Estimated quantity and duration of the unauthorized discharge
- Identity of person reporting the unauthorized discharge

As soon as possible but within 24 hours, EH&S's Environmental Services Group will provide a certification report to the RWQCB that the State Office of Emergency Services and the City of Berkeley have been notified. If the SSO meets the SWRCB's category 1 reporting requirement, then the Environmental Group will submit a report within 3 business days. If the SSO meets the category 2 reporting requirement, then a report will be submitted within 30 calendar days after the end of the calendar month in which the SSO occurs.

Communication reporting requirements are summarized in Table 2-1.

Table 2-1 Summary of Communication Requirements for Sanitary Sewer Overflows

Communication Type (all are required)	Spill Type	Timeframe Requirements	Agency Being Contacted	Method for Contact
1. Notification	Discharges of any amount: -to a drainage channel or surface water -to a storm drainpipe that was not fully captured	As soon as possible, but not later than 2 hours after becoming aware of the SSO	Office of Emergency Services	Telephone: (800) 852-7550 (obtain a control number from OES)
			Local health dept.	City of Berkeley Environmental Health - business hours: 510-981-5310 - after hours: 510-981-5900 or 911
			Regional Water Board	Electronic: http://www.r2esmr.net.sso_login2.asp or Spill Hotline: 510-622-2369
			UC Berkeley	University of California at Berkeley -business hours: 510-642-3073 (EH&S) -after hours: 510-642-3333 (PD)
2. Certification	Any discharge to a drainage channel or surface water	As soon as possible, but not later than 24 hours after becoming aware of the SSO.	Regional Water Board	Electronic: http://www.r2esmr.net.sso_login2.asp or Spill Hotline: 510-622-2369
3. Reporting	Discharges: -that equal or exceed 1000 gallons -to a drainage channel and/or surface water -to a storm drainpipe that was not fully captured	Category 1 SSO: initial report within 3 business days , final report within 15 calendar days after response activities have been completed.	State Water Board (CIWQS)	Electronic (only) to CIWQS: http://ciwqs.waterboards.ca.gov/
		Category 2 SSO: within 30 calendar days after the end of the calendar month in which the SSO occurs.		Electronic (only) to CIWQS: http://ciwqs.waterboards.ca.gov/

Acronyms and Abbreviations

BACWA	Bay Area Clean Water Agencies
BWF	Base wastewater Flow
CCTV	Closed circuit television
CDFG	California Department of Fish and Game
DOE	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
DOE	Department of Energy
EBMUD	East Bay Municipal Utility District
FOG	Fats, Oils and Grease
FSE	Food service establishment
gpm	gallons per minute
GW	Groundwater Infiltration
HIMCAD	History Inventory Maintenance and Condition Assessment Database
I/I	Infiltration and inflow
ISDHH	Imminent and substantial danger to human health
LBNL	Lawrence Berkeley National Lab
MGD	Million gallons per day
MRP	Master Reclamation Permit
NPDES	National Pollution Discharge Elimination System
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PMT	Plant Maintenance Technician
RDI/I	Rainfall-dependent infiltration and inflow
RWQCB	Regional Water Quality Control Board
SCBA	Self contained breathing apparatus
SHECAP	Sewer Hydraulic Evaluation and Capacity Assessment Plan
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
TM	Technical Memorandum
UM	Utility Section Manager
WDR	Waste Discharge Requirements